

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/013107

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07C303/32 C07C67/03 C07C69/68 C07C69/70 C07C69/704

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, CHEM ABS Data, PAJ, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| X          | PATENT ABSTRACTS OF JAPAN<br>vol. 2003, no. 07,<br>3 July 2003 (2003-07-03)<br>& JP 2003 073330 A (WAKEJIMA IKUKO),<br>12 March 2003 (2003-03-12)<br>abstract | 6-23                  |
| Y          | -& JP 2003 073330 A (WAKEJIMA IKUKO)<br>12 March 2003 (2003-03-12)<br>Text of the automatic translation<br>the whole document<br>-----<br>-/--                | 6-23                  |



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

4 August 2005

Date of mailing of the international search report

15. 09. 2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Österle, C

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|------------|--|-----------------------|
| Y          | ISHIHARA ET AL: "Scandium Trifluoromethanesulfonate as an extremely active lewis acid catalyst in acylation of alcohols with acid anhydrides and mixed anhydrides"<br>JOURNAL OF ORGANIC CHEMISTRY, AMERICAN CHEMICAL SOCIETY. EASTON, US,<br>vol. 61, 1996, pages 4560-4567,<br>XP002313300<br>ISSN: 0022-3263<br>the whole document                      | 6-23                  |
| A          | PATENT ABSTRACTS OF JAPAN<br>vol. 1998, no. 01,<br>30 January 1998 (1998-01-30)<br>& JP 09 227442 A (DAICEL CHEM IND LTD),<br>2 September 1997 (1997-09-02)<br>abstract  | 1-23                  |
| A          | SCHMEISSER M ET AL: "ZUR CHEMIE DER PERFLUORALKANSULFONSAEUREN"<br>CHEMISCHE BERICHTE, VERLAG CHEMIE GMBH. WEINHEIM, DE,<br>vol. 103, 1970, pages 868-879, XP002019848<br>ISSN: 0009-2940<br>*experimental section*  | 1-5                   |
| A          | US 4 219 540 A (JASS, HERMAN E ET AL)<br>26 August 1980 (1980-08-26)<br>cited in the application<br>examples   | 1-5                   |
| A          | OLAH G A ET AL: "BORON, ALUMINUM, AND GALLIUM TRIS(TRIFLUOROMETHANESULFONATE) (TRIFLATE): EFFECTIVE NEW FRIEDEL-CRAFTS CATALYSTS"<br>JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, AMERICAN CHEMICAL SOCIETY, WASHINGTON, DC, US,<br>vol. 110, no. 8, 1988, pages 2560-2565,<br>XP001033717<br>ISSN: 0002-7863<br>page 2561, column 1 - column 2               | 1-5                   |
| A          | ATSUSHI KAWADA ET AL: "LANTHANIDE TRIFLUOROMETHANESULFONATES AS REUSABLE CATALYSTS: CATALYTIC FRIEDEL-CRAFTS ACYLATION"<br>JOURNAL OF THE CHEMICAL SOCIETY, CHEMICAL COMMUNICATIONS, CHEMICAL SOCIETY. LETCHWORTH, GB,<br>vol. 14, 21 July 1993 (1993-07-21), pages 1157-1158, XP000564618<br>ISSN: 0022-4936<br>page 1157, column 1, last line - column 2 | 1-5                   |
|            | --/--  |                       |

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**International Application No**

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**C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category * | Citation of document, with indication, where appropriate, of the relevant passages                                  | Relevant to claim No. |
|------------|---|-----------------------|
| A          | <p>EP 0 287 426 A (RHONE-POULENC CHIMIE)<br/> 19 October 1988 (1988-10-19)<br/> the whole document</p> <p>-----</p> | 6-23                  |

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2004/013107

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☒ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-5

Process for the production of metal salts of  
trifluoromethane sulphonic acid  
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2. claims: 6-23

Use of metal salts of trifluoromethane sulphonic acid as  
transesterification catalyst  
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/013107

| Patent document<br>cited in search report |   | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---|---------------------|----------------------------|---------------------|
| JP 2003073330                             | A | 12-03-2003          | NONE                       |                     |
| JP 09227442                               | A | 02-09-1997          | NONE                       |                     |
| US 4219540                                | A | 26-08-1980          | NONE                       |                     |
| EP 0287426                                | A | 19-10-1988          | FR 2613715 A1              | 14-10-1988          |
|   |   |                     | AT 65490 T                 | 15-08-1991          |
|   |   |                     | BR 8801711 A               | 07-11-1989          |
|   |   |                     | DE 3863821 D1              | 29-08-1991          |
|   |   |                     | EP 0287426 A1              | 19-10-1988          |
|   |   |                     | IE 60454 B1                | 13-07-1994          |
|   |   |                     | PT 87221 A ,B              | 01-05-1988          |